

D<sup>1</sup>

9. (Twice Amended) A non-naturally occurring composition of matter comprising a protein complex possessing nucleic acid polymerase enhancing activity, the complex comprising a plurality of subunits wherein at least one subunit has a molecular weight of approximately 17-18 kD in the fully denatured, monomeric form, and wherein the complex is selected from the group consisting of: a polymerase-enhancing protein complex of one or more wholly or partially synthetic proteins having the same amino acid sequence as the naturally-occurring protein or analogs thereof possessing polymerase enhancing activity; or a polymerase-enhancing protein complex comprising one or more of the naturally occurring or wholly or partially synthetic proteins.

D<sup>2</sup>

Sub E1

17. (Thrice Amended) A composition of matter according to claim 16, wherein said protein is selected from the group consisting of: a protein having a sequence comprising SEQ ID NO: 69 or 11, wherein the sequence comprising SEQ ID NO: 11 or 69 is within about 20 amino acids from the amino terminal end of the protein; a protein encoded by a nucleic acid having the sequence of SEQ ID NO: 70 or a sequence that hybridizes to the complement of the nucleotide sequence of SEQ ID NO: 70 under stringent conditions; or a protein having a sequence of amino acids comprising SEQ ID NO: 71.

D<sup>3</sup> Sub E3

59. (Twice Amended) A P45 protein produced from a cell containing a DNA construct comprising a sequence encoding SEQ ID NO: 71 operably linked to an expression vector, wherein the protein is in monomeric, dimeric, or multimeric form.

D4 Sub E6

85. (Amended) A protein having PEF activity comprising one or more of SEQ

ID NO: 72-73.

Sub E8

95. (Twice Amended) A non-naturally occurring composition of matter

comprising a polymerase-enhancing protein encoded by a DNA sequence that hybridizes to the complement of the nucleotide sequence of SEQ ID NO: 70, wherein the hybridization conditions comprise incubation in 5x SSC and 50% formamide at 42°C, and washing in 0.1x SSC and 0.1% sodium dodecyl sulfate at 60°C overnight.

D5

96. (Twice Amended) A non-naturally occurring composition of matter

comprising a polymerase-enhancing protein encoded by a DNA sequence that hybridizes to the complement of a nucleotide sequence that encodes a protein, wherein the hybridization conditions comprise incubation in 5x SSC and 50% formamide at 42°C, and washing in 0.1x SSC and 0.1% sodium dodecyl sulfate at 60°C overnight; and wherein said protein has a sequence comprising SEQ ID NO: 69 or 11, wherein the sequence comprising SEQ ID NO: 11 or 69 is within about 20 amino acids from the amino terminal end of the protein.

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